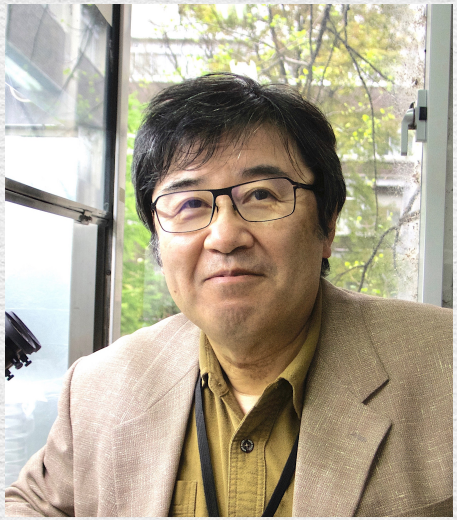
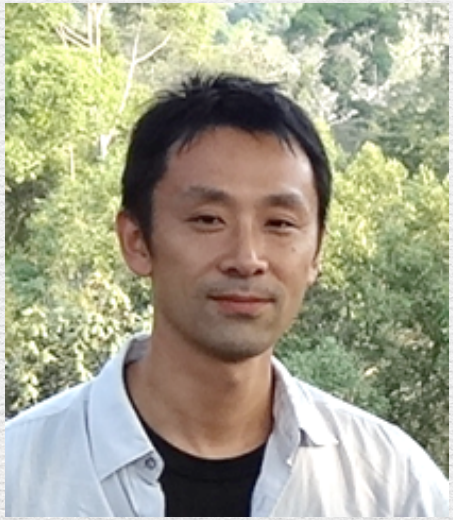
Terrestrial Microbiology and Systematics



Prof.
TANAKA,
Chihiro



Assoc. Prof.
WATANABE, Tetsuhiro

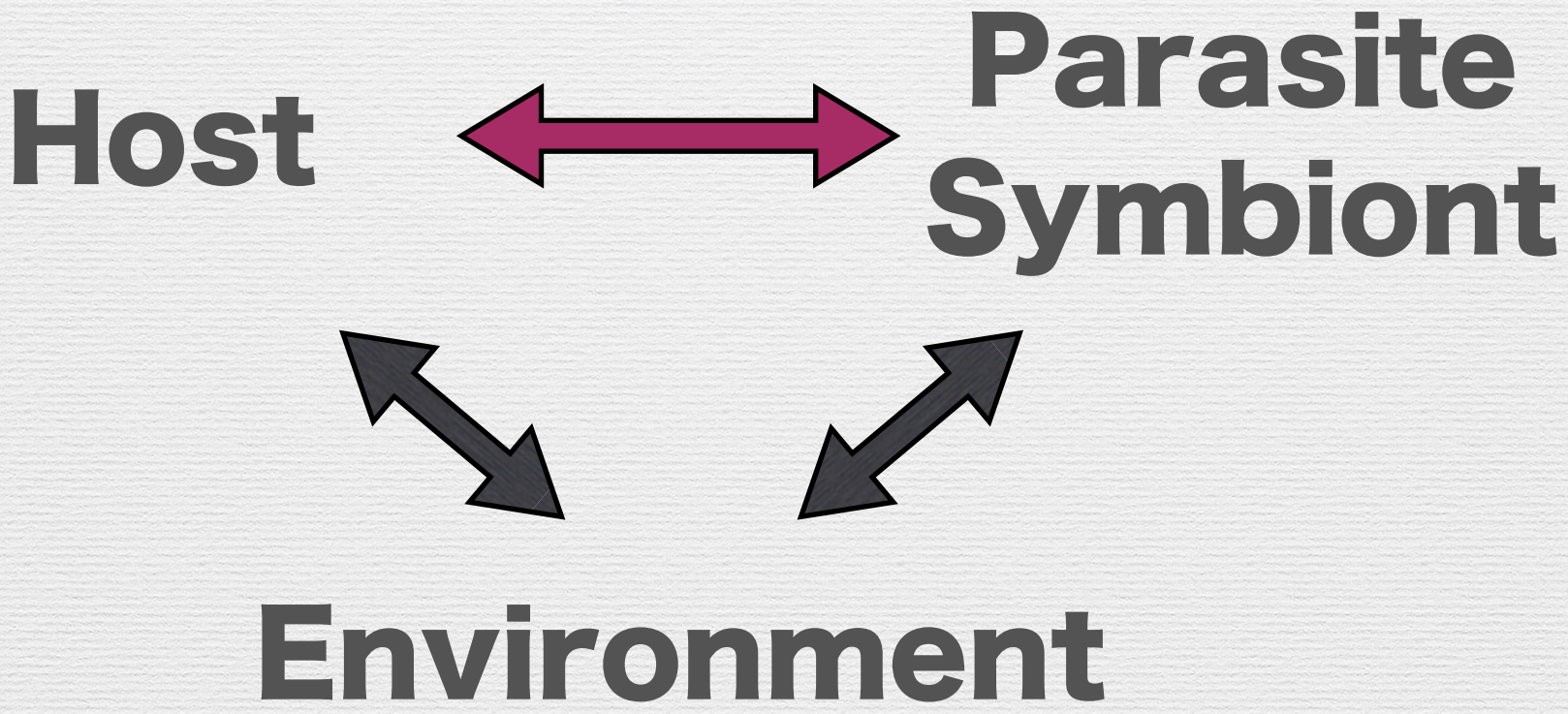
Assist. Prof.
TAKEUCHI,
Yuko

A wide variety of microorganisms inhabit terrestrial environments such as farmland and forests. In particular, fungi such as molds and mushrooms have evolved as decomposing microorganisms of terrestrial plants, many of them are specialized as plant-parasites or symbionts. It is said that infectious diseases of humans have changed the history of mankind, but infectious diseases of crops have also had a great impact on our history and cultures. On the other hand, symbiotic fungi with plants contribute to the host's adaptation in the environment hard to grow. Therefore, control of these fungi is essential for improving and stabilizing agricultural and forestry productivity.

A foliage pathogen of maize (grey window) causes a bright symptom

A root symbiont mushroom (left top) and its associated organ with a host tree (mycorrhizha, right top).

Actually a host plant-parasite/symbiont interaction is not only defined by these organisms. Environment, including abiotic and biotic factors deeply influences the interaction. In other words, it is necessary to understand and analyze these factors in order to stabilize agricultural and forestry production.



Our activities

- Our main targets: plant pathogens, symbionts
  - ➡ Identification, classification studies
    - ➡ for the developments of diagnostic methods, control or application of microbes for plant health
  - ➡ Physiological, ecological studies
    - ➡ for the developments of new fungicides, new approach of plant protection